
The Impact of Longevity on Health Care Systems

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Abstract:

Population's ageing and the increasing longevity of life are not spontaneous processes. In reality, it is a society's achievement that people are given a chance to live longer. This state is obviously achieved only when citizens take this opportunity seriously and contribute to the overall conditions with their own interests and behavioral choices. More importantly, with people living longer, the overall picture of the society is changing. It even forces grand financial schemes to change, including the health care one which must comply with societal changes. In this regard we can clearly perceive that some of the aspects that we could have been relying on in the past are becoming obsolete and new concepts emerge, that have to be taken seriously. The paper will be based on the overall picture of determinants and factors that poses longevity on health care systems. Specific situation in the Czech health care system, is assessed and the financing schemes used will be described, including current trends caused by economic downturn. The arguments for maintaining and enhancing schemes of health care financing without individual risk assessment will be discussed and presented to the participants.

Key Words: Health Care, Health Care System, Financing, Public Expenditure, Private Expenditure

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1. Introduction

The increasing longevity of life poses inevitable challenge on health care systems. At the same time we have to note, that this is just one of the challenges the health care system is facing and it has been under such a challenges since medical profession (we can say even art) has appeared in ancient times.

Since the 1960's, when John Kenneth Arrow (Arrow, 1963) and others introduced to general economists the economics of health, this discipline has become inevitable tool for everyone who wants to talk about the effectiveness of health care systems in a way that tries to achieve this effectiveness under the condition of various economic environments. This has always made the health economics difficult to implement, because the tools used in one country were not working well in another one, where the conditions and especially the philosophical backgrounds were different. As stated in literature, "health systems differ in their design, in the amounts and types of resources they use, and in the health outcomes and other results they attain. But health policy makers share common goals and can learn from each other's experiences as to what works – and what does not – when making changes to health systems intended to improve performance." (OECD, 2004).

In this conference paper, I will try to emphasize and briefly go through things which are – in my point of view – the key elements of thinking about the health care systems and their effectiveness in the context of longevity. First, we have to define, what the effectiveness of health care systems is about.

There are a lot of criteria, which could be used on this purpose. Then, the discussion of longevity impact on current social systems takes place, followed by brief assessment of Czech health care system issues and implications for financing schemes settings. Given the limited scope and purpose of the paper, the issues will be presented as the general level, showing the key concepts and trends that are currently seen as important.

2. Factors and Logic of Health Care Financing Schemes

The separate criteria of effectiveness could be grouped into three main categories. In this sense, we can define social, economic and medical criteria. These are the main indicators which all form the general aim – the health status of particular population. This general aim is, however, one of the hardest and most key elements of health care systems. Where is the problem with this aim?

The problem is very much connected with the nature of society's criteria. There are basically two groups of them – the market criteria and the organizational-command

criteria. None of them is perfect by itself, however, they are suitable for different situations and different purposes. The connection with health status of the populations is as follows. The market criterion assumes, that demonstrating its own individual responsibility of one's health, when performed properly and by the majority of citizens, will lead to achievement of this aim, because if everybody has the health care on the top of his priorities' list, the he will demonstrate this priority and thus the resource allocation to this area and market-effective behavior will prevail. The organizational-command criterion assumes, that the interest of health status of the citizens is, in addition to their own due, also the thing which should be organized on the basis of solidarity and cost-effectiveness in the whole society. Moreover, this criterion emphasizes that the market alone is unable to make effective allocation because of the market failures. In this short overview, it is not possible to mention them here in detail.²

It however means that the pure market solutions based on demand and supply simply do not work. There are various evidence of this, for example the following table, which shows expenditure characteristics of the health care systems in the USA with the projection into year 2020 (and more data could be viewed at the cited source, not transferred here because of the limited scope of this paper).

Table 1 – Health expenditure projections, USA

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
% GDP	17,6	17,7	17,6	17,6	18,1	18,3	18,6	18,8	19,1	19,4

Resource: US government. National Health Expenditure Projections 2010-2020. Online: <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/downloads/proj2010.pdf>, <cited 30.8.2012>

The table shows ever raising the total expenses on health care expectations, in the unique case of USA, divided almost 50/50 between public and private spending. The selection between those two methods of payments is a very complex one. Generally speaking, the usefulness and "consumer's" satisfaction is a very subjective thing. This is also the cause, as viewed by many economists such as Hayek, why the centrally planned economies have failed to perform in comparison with the market oriented ones. The so-called dispersed knowledge simply implied that those economies because of centrally determined needs have failed in actually knowing

² Here we can recommend the reader both Czech and English relevant literature, such as Culyer, A.J., Maynard, A. (eds). Being reasonable about the economics of health. Edward Edgar Publishing, Cheltenham, 1997 or Goulli, R. Zdravotnictví a veřejná ekonomie. In Analytická, koncepční a hodnotová východiska zdravotní politiky I. IZPE, Kostelec nad Černými lesy 2001

what the people really want. Yes, we have to admit that what people really want is not always the best they can get (smoking, various food, etc.). But, the general unification of allocation priorities starts to overcome also those needs which could be realized without much harm.

How does health care fit into this? We have to admit that it is one of the most complex things, especially in the terms of demand characteristics. The objectively oriented approach in strict sense leaves the responsibility and duty of treatment on the doctor, and keeps the patient's role within the space of telling how he feels and what he needs. While this may be satisfying for the majority of cases, it also creates some tensions which some of the approaches used recently are trying to overcome.

On the other hand, the classic consumer oriented approach is, because of the nature of human health, also not easy to implement. Yes we can pretend that the vast majority of patients want better health. But, it is dubious that the health they demand is because of this demand gets transformed into adequate health care which actually leads to the health achievement. This disparity between health and health care has been since Arrow's times the main topic of concern.

We have to admit that with advances in health care, with some illnesses, this relationship is getting closer. When the doctors are able to cure some illness for sure – or nearly for sure – it seems rational for the patient to demand that type of health care, because he knows that it will lead to the healing of that illness. But here we come to a problem if the doctor says to patient no, the type of treatment you demand is not appropriate for your case, but here is a more expensive method which suits you well. When we are in the space of direct payments, the patient is in serious trouble – because in this moment he does not have any possibilities to escape from the decision he has to make. And in this model, he really has to make it – because it directly affects his bank account and it directly affects his health status.

By those bare words, we have re-described things that health economics for years works with. It is now essential to extend our thoughts further to the comparison with the cause, when the health care is objectively determined by the doctor. In this case, usually is publicly financed – because privately financed systems usually perform in the ways described in the previous paragraph. So this public access is based on the statements that individuals are often bad judges of their own health and priorities are determined also by social judgments (Culyer et al, 1997).

It would be not fair to hide that the author of this paper is, personally, generally in favour of the publicly financed health care systems. It seems to be the right way to provide access to health care for the citizens, which is also noted in OECD recommendations (OECD, 2004). But saying this is also necessary to say the other things. I am not sure, that those systems by their nature are able to fulfill they part of

patient's needs which is not objectively determined. And to make things more complicated, we can throw in a question whether this part of health care is really essential.

Well, it depends on how the objectively needed treatment will be specified. As noted before, the publicly financed (and thus organizational-commanded or with limited competition) determine their priorities by social judgment. This social judgment however, can vary. To make an extreme example, we can imagine that even if no prison admits that the prisoners are in danger because of health care deficit, probably not much of us would, in the case of need choose the health care at the level in which the prisoners are having. This is just to note how the social judgments can vary.

Even if we talk about the general population, based on personal utility approach, the position of different people to health care utilization is different. Some accept the health care as it goes, and when not using it much, they do not put much attention to this sector. Some have various chronic illnesses and thus are more or less dependent on health care sector. Some do expect that this sector will improve the quality of their lives. The moving between those groups during life is possible and depends on personal health status and the type of personality.

While knowing that every comparison is imperfect, we can note that this differentiation is not unique for health care. Even the car owners differ – one washes his car every week and polishes it thoroughly, one does not do it for half a year or so. One with the small signs of problem goes to the service center in fear of not completing the planned journey; one ignores even large problems because he does not notice or underestimates them.

Anyway, in the car service, the financing system does not make problems. Simply because the more careful and responsible driver pays more with reward of potentially hassle-free journey, and the other ones take risk that he will have to do a repair himself on the road or pay for assistance. And those who don't have enough money simply do not have a car at all.

This type of approach, however, is impossible in health care. Everybody needs health care, up to some extent, we cannot choose whether we will be treated or not. But there is a doubt how far the existence of this need should be extended. The problem, in my opinion, arises, when the need starts, in some cases, to hide patient's demand. How can it be hidden? Easily. In the run of effectiveness and clinical accuracy, the patient can be sinking on the list of priorities of the system. It is hard to say, but the primary approach of market is satisfied patient – because he pays. Yes, it is sometimes at the expense, that he is satisfied, but not healthy. As the older OECD study (Docteur et al, 2004) states about US health care system, "It does

relatively well in terms of clinical outcomes achieved. It is also responsive, adapting quickly to changes in consumer preferences, and the majority of Americans is highly satisfied with the care they receive. But, the costs of health care are high, and many Americans are at risk of being uninsured at some point in their lives. Also, like in other OECD countries, service use and health outcomes vary widely across the population (Thalassinou and Pociovalisteanu 2009). Neither public nor private payers have achieved much in the way of curbing expenditure growth over the long term, despite short-lived successes on the public side in containing prices through prospective payment systems and on the private side in controlling volume and costs through managed care.“

It is the duty of the public financed system to know its weaknesses and perform in reversed trend, so that the general effectiveness of the system, all the numbers and expenses will also extend to the satisfaction of their clients, even through adequate measures of copayments. The advantage of this approach is clear – because of the existence of relative poverty, there will always be in the society a lot of people, who even with use of mechanisms partially compensating market failure, such as insurance, would not have, at some point of their lives, access to health care at our “old good” objective level. The publicly financed systems overcome among others this limitation and when used properly, have better chance to solve health care problems and be the key tool of health policy makers.

But, they must not forget, that the satisfaction of the patient is also the key factor of success – and mainly those patients that value high their health and quality of their lives. Simply because if this satisfaction does not occur the people will seek the advantages of the privately financed system, not knowing that it is based in different risk-compensation schemes and rules which could be potentially disastrous for the necessary part of health care, thus losing the possibility to access it for some of us.

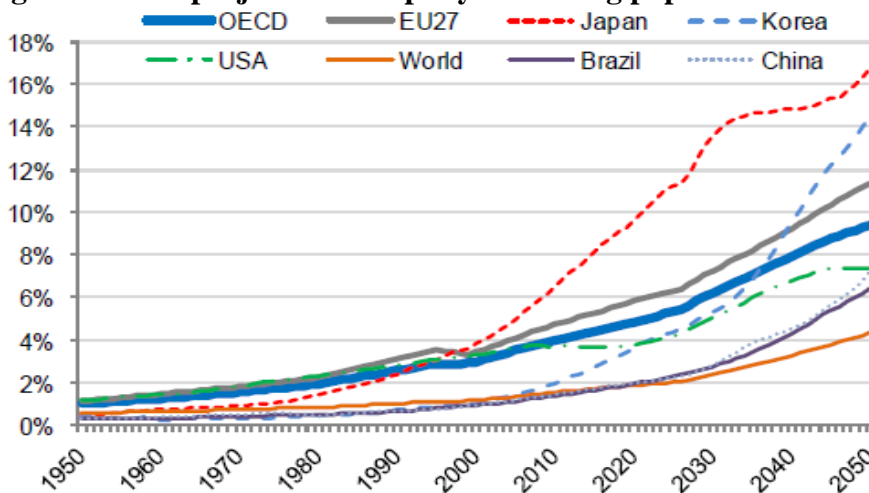
3. Longevity Induced Issues

Population's ageing and the increasing longevity of life are not purely spontaneous processes. In reality, it is a society's achievement that people are given a chance to live longer. This state is obviously achieved only when citizens take this opportunity seriously and contribute to the overall conditions with their own interests and behavioral choices.

More importantly, with people living longer, the overall picture of the society is changing. It even forces grand financial schemes to change, for example the pension and health schemes and the labour market must comply with societal changes. In this regard we can clearly perceive that some of the aspects that we could have been relying on in the past are becoming obsolete and new concepts emerge, that have to be taken seriously.

The famous Czech playwright Karel Čapek wrote at the beginning of the 20th century *The Makropulos Case* – a theatre play that tried to deal with this problem on the artistic level. Čapek very movingly describes the issues connected with having the possibility of endless or very long life. However, nowadays we can see that these formerly sci-fi issues are becoming true in reality. To see the projected dimension, we can cite the following graph from recent OECD projections. By 2050, the share of people over 80 is expected to increase from 4 % in 2010 to nearly 10 % across the OECD.

Figure 1 – The projection of rapidly increasing population over 80



Source: Colombo, F. et al (2011), *Help Wanted? Providing and Paying for Long-Term Care*, OECD Publishing www.oecd.org/health/longtermcare/helpwanted

Longevity is first of all a status and condition that refers to a biological measurement of life expectancy in a given population. But this is not exhaustive if we aim to understand longevity in a socio-cultural and economic perspective as well. Given the demographic projections, European societies are becoming more and more old both in absolute and relative terms, therefore longevity becomes also an individual and collective variable that must to be accounted while planning and enforcing specific oriented policies and interventions in our societies.

Longevity is an individual experience in psychological and existential and a collective one in cultural terms so that it can be easily understood in social terms with the notion of ageing. Ageing in this way has a multiple facet composed by biological, psychological and socio-cultural dimensions that all together contribute to set and define a natural process of organic decay. For the medical care industry, it also represents significant challenges in defining what is still “natural” and what has to be medically treated.

The current problem of longevity is based on two important demographic facts. On the one hand, due to the demographic behaviour during 20th century in Europe, the Europeans now face the period of demographic decline and increased dependency ratios. They have to adapt on the situation where the expenditures connected with it must be beared by current active generation. This may be a unique situation, because in the past, the demographic was always “reversed” and in the future, the populations could be stationary. However it calls for policies that will be able to help overcome the phase of decline.

On the other hand, the length of life increased rapidly during 20th century and even if the demographic decline is over, we have to question if such a long life could be usefully and productively “lived” in current society and whether we provide adequate measures for it. This fact is connected with the concept of extending a productive and healthy phase of life in order to make use of increasing possibility to live longer. The causes of death have significantly changed and currently degenerative and civilization diseases dominate. A strategy to manage this is to postpone their incidence to higher age, thus prolonging the phase of life where a man is productive, independent and in relatively good health. So the general concept of policies induced by this type of fact is to make adaptive changes embracing this situation, define better schemes for participation of people in society, assess the labour market conditions and also define high-quality institutional framework for ageing.

Significant factor of socioeconomic system sustainability is also the presence of adequate reproductive model. Without appropriate “supply of new generations”, all the existing social schemes will fail, because they are deeply rooted in the fact that they cannot replace natural reproductive behaviour. If this fails, they can only partially compensate negative effects that appeared. If the motivation problems and social pressures that are preventing the current generation from adequate reproduction remain, the current problem could replicate to the next generation with lower total number of people, but the schemes will fail again.

We thus have to manage well things connected with ageing, which is eased by the fact that we are equipped with adequate social tools and measures, which demonstrably lead to optimal quality of life and fulfilling of individual needs and expectations, if implemented properly. Simultaneously it is necessary from the long-term point of view to create such a social environment that stimulates the healthy demographic structure in the sense of preserving and possibly expanding mankind in defined social and natural environment. A man surely has higher ambitions that the animals in the form of transfer his genetic information into the future generations, but in the frame of this effort he should not resign to adequate reproductive behaviour and its acceptance and support in society.

At the same time, it is necessary to pursue economic and social policies that encompass the problem of population ageing and the longevity of life in reality. We cannot expect that the people will miraculously adapt to rapidly changing conditions. Still, they have to be given a real chance to participate in socio-economic schemes, sustainable for a distant future.

Frankly, this assumption is in conflict with the problem of public choice, with the limitations of public budgets, with changing abilities of health care system and also with situation on the labour market. It is now becoming obvious that well-paid work has become a very scarce commodity, with the high productivity of current industries and agriculture not offering a decent space for people to participate. In addition, it does not offer a participation possibility for those who are already less performing and still do not want to disappear from the market completely, or those people could not occupy another meaningful and useful place in society where their skills could be adequately used.

At the conceptual level, we have to carefully distinguish between various approaches to longevity management and decode their sense. Two extreme points of view appear in theory and are widely discussed: first, which looks at the population and its demographic, social, economic, cultural institutional and legal framework and tries to improve the environment and conditions so that the results will be better quality of longer life. In this approach, money and social systems are subject to control of society and the overall results in the form of the population overall status and well-being are crucial for their allocation and evaluation, including a concept of social rights which are inevitable for the for the longevity achievements.

Second approach, which sees a man and its activity as a crucial prerequisite for better ageing and pursues challenges in the individual level, thus leaving the results only on the individual choice of a man and thus also taking no systemic responsibility and care about the results. In this approach, money is seen as a form of power available to the individual based on its performance and giving him the possibilities to gain social effects, including good quality of life and possibly longevity.

These approaches seem to be contradictory to each other. Socio-economic analysis tries to overcome and solve the problem by taking an approach that is realistic and respects both points of view. It takes objective measures and statistics concerning longevity, in order to see the big picture of what is population ageing about and what is the real situation and challenge that the Europe is facing. Also, it employs economic modelling to see what is economically feasible and what not, in this sense sees as very important the concept of long-term sustainability of socioeconomic schemes.

Given current technical achievements and societal advances, it makes sense to strive for longevity through enabling well-designed individual pathways for people during their entire life. By choosing and following those pathways, the people can make use of their productive potential for their entire life.

In the sense of chosen approach, the conflict between freedom and organization of society exists only on theoretical level – in reality it always transforms to the real mix of solidarity, equivalency and motivation strategies for the people. The design of social systems has to respond to the needs for the population and provide effective ways for better ageing – with respect to reality and to the different characteristics of people in the terms of income, wealth, health status, priorities and desires. Then it can offer people real options they can choose from and thus improve their chances for better and longer life.

At the same time, this synthetic approach is able to assess the dilemma between public and private resources for ageing. While public budgets are under fiscal pressure nowadays, actually it calls for improving and redesigning the flows of money in economy, so that the effects in longevity and quality of life could happen, as this is the ultimate goal of social and economic development and if not gained, it does not make much sense to pursue the economic growth further. This includes an assessment of important tools for ageing, such as pension systems and provision of social services and long-term care. Responding to the challenge of longevity thus means primarily to have high-quality mechanisms and techniques that will enable people to gain actual effects they need for better and graceful ageing. The resources of their financing should be chosen based on the empirical experience and their economic characteristics, also taking into account if it is desired to have them available universally or selectively in the terms of social acceptability.

Adequate handling of the population aging becomes the key determinant of health care spending and successful health care reform. A hypothesis exists, that the population ageing will, *ceteris paribus*, lead to increased spending for health care. Thereby the necessity to allocate public resources and sustainability of the financing schemes will be compromised in the near future. In addition, traditional public health and public financing schemes could deteriorate under this pressure, while struggling with management financing and provision of such increasing need of medical care. This has been used as a central argument for changing the schemes of financing health care, paradoxically also suggesting an introduction of private property of health insurers and facilities, decreasing the degree of solidarity in the system and relying on market and quasi-market approaches to financing the system (Zajac, Pažitný, 2001).

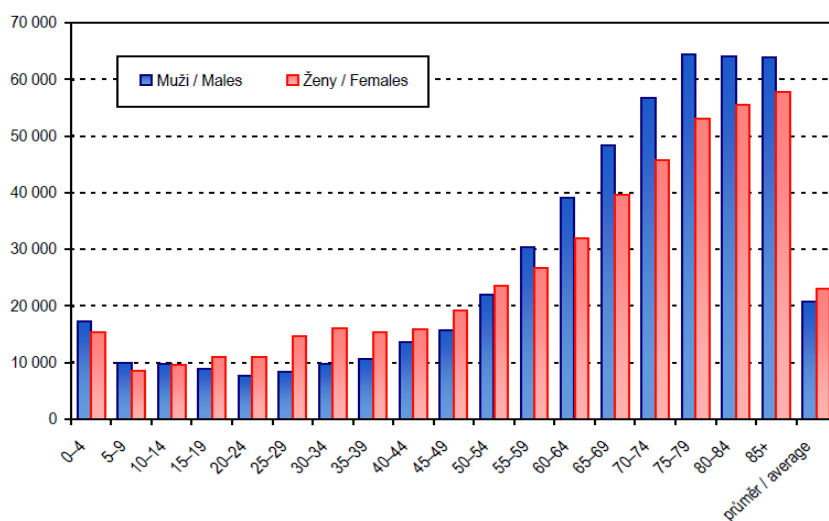
On the other hand, several analysts argue that such a process will not necessarily achieve its full extent and that effects of population aging on the health care

spending do not need to be dramatic. Richardson and Robertson (1999) show that demographic aging can influence health care spending only by a small margin and even some national studies support such findings (Evans 1995). It has been noted that health expenses could be, at least partially, treated as an investment and thus contribute to the economic growth (Durdiová, Mertl 2008). This is widely recognized internationally, e.g. by a comprehensive study of Suhrcke et al. (2005). The medical literature discusses the problem of “senectus molesta” – whether the increasing length of life really leads to prolonged periods of expensive health care consumption and severe aging problem (Mühlpachr 2004). In the area of public health, “finding common good” and “health promotion” have been analyzed, showing that the way to cope with health expenses is not the only an effective provision of health care, but also, and more prominently, preventing people from getting sick, arguing that the doctors usually have to do a very expensive repair of what could have been completely prevented from happening (Holčík 2009).

These conceptual approaches have not merged and still stand in an opposition to each other. Managing these issues requires macroeconomic stability of health care systems and optimized configuration of different methods of financing, so that they can withstand the needs and demands placed on them. The general effort for making the whole health system “as robust as possible” is well suited also for longevity “induced” problems, whose implications have to be discussed. In this sense important are the key institutions appearing in the health care system and their role, the ratio of private and public resources and their role in financing health care, methods of management of new diseases and the socio-economic position of pensioners in health care systems.

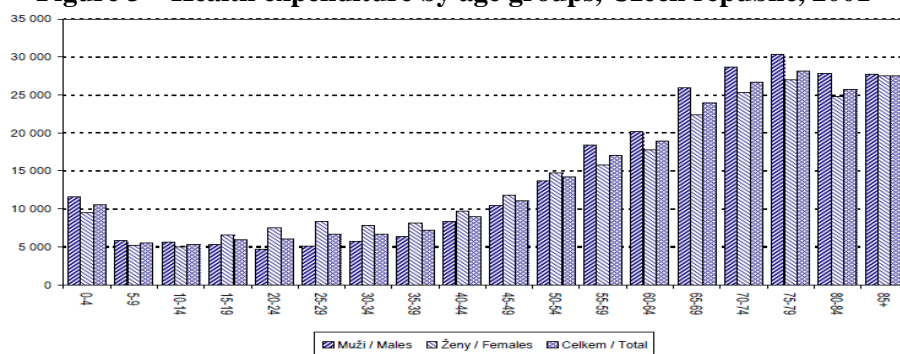
4. Implications and Consequences in the National Context

Czech health system faces similar trends as described above, the economic downturn has just increased the pressure on the system and recent reforms are primarily focused on limiting supply of health care and rationalization at the supply side, with potentially problematic effects. As for the Czech health care system, we can show a graph of expenditure distribution by age groups.

Figure 2 – Health expenditure by age groups, Czech republic, 2009

Source: ÚZIS, Economic information on health care 2010. Prague: ÚZIS, 2011

As we can see, the distribution is very uneven between groups. Even more interesting is a comparison with data from 2001.

Figure 3 – Health expenditure by age groups, Czech republic, 2001

Source: ÚZIS, Economic information on health care 2001. Prague: ÚZIS, 2002

Here the structure has been a lot flatter, which means that in the last decade, the “risk” or simply the costs associated with different age groups have largely differentiated. This is strongly connected with the problem of risk classification, which represents a big challenge for health care systems financing schemes.

It is also worth noting that in health care, we have two important types of solidarity – according to wealth (income) and according to health status. These two types of

solidarity are not the same and the solidarity according to health status is actually even more important than the wealth one. It is so because the risks selection in health is ethically, economically and medically highly problematic and thus is not recommended to be allowed or should be subject of strong regulation. The main reasons are as follows (Mertl, 2011):

- empirical - the majority of negative experiences with health care financing and provision with a significant proportion of private funding and private insurance (e.g. the U.S. health care system) outcomes from the usage of risk selection mechanisms.
- ethical - not just because of the "solidarity" with healthy patients, but mainly because of the fact that house, car or life insurance a person can relatively freely get rid of. And if he does not want it at all or loses the ability to pay premiums, he does not necessarily need it and may therefore not insure it or even can sell it. But himself and his health risks a man cannot change – or just partially, but this also needs medical care (e.g. getting rid of addictions etc.).
- medical - in determining health risks the insurance companies rely on medical records, resulting in that those who are not treated properly or at all will have "cleaner" medical records than those who are honest and seek for treatment of their problem, even by complicated methods of treatment. Moreover, it is known that the ability of institutions (health insurance companies) from paper documentation to deduce reality, especially with regard to complex diseases, is limited. Medicine can treat well, but it is far less successful in healing. Past medical history can act as a strong discriminatory factor, moreover, in many cases not closely approximating reality. It can lead to segmented medicine. If a person has a particular disease, it does not mean it will necessarily consume health care in other branches of medicine. This would lead to a "professionally" segmented insurance claims, undesirable from the viewpoint of the integrity of patient treatment.
- psychological - if the patient is/was being treated for any illness, and simultaneously he is because of this fact discriminated against the possibility to invest into their treatment or denied in continuing treatment (perhaps because the insurance company refuses to prolong his insurance), it will cause him to extremely negative feelings about it.
- legal – it is debatable whether patients can be forced to provide information about their health, especially in government-supervised health system, for the "pricing" of their risks. Tell someone about their health problems and on

this basis, to pay higher health premiums is in civilized countries, in principle, unacceptable, and especially difficult to government to enforce or facilitate.

- economic - the more we allow risk selection in health insurance, the more it will become a problem, because the insurance companies will then make selections based on this and/or try to make profits of it at the expense of services provided. In the end, a lot of people will not be insurable because of their individual risk exceeds their ability to pay. In the private health insurance without the specific regulation the insurance market fails, it results in grouping clients according to health risk theoretically up to its full individualization and thus un-insurability of a large number of potential candidates or making the insurance pools very small.

5. Conclusion

Health care system and health care itself is one of the most complex goods at the planet. The current projections and trends show proposed increase of health care expenditure, which is consistent with the development during last decades. Of course, it has its ceilings, limited both by the overall capacity of national economics and the share that we can allocate to health care system in general. At the same time, ordinary market tools in the form of direct payments for health service are not suitable for general use. There is significant theoretical foundation in the literature and empirical evidence that private and public schemes of indirect financing are key to the sustainable and rational health care system financing.

Longevity itself is just one factor of health care systems performance and philosophically it is also the intrinsic sense of health care provision – living longer and healthier life is what we expect from a high quality health care system presence, including prevention and prolonging the productive participation of people in society. The key approach of managing longevity is thus as “simple” as the task for health care systems was always – solve problems when they come, cure illnesses carefully, trying to prolong healthy life and postpone the onset of illnesses connected with higher age.

The Czech health system faces similar challenges as the others. We can note increasing expenditure differences by age groups; this has largely changed in the last 10-15 years. Together with the natural differences between health status and health risks of people, it calls for the strengthening of the public financing role, which simply means that the people will finance national health care system according to their disposable income. This is perfectly rational and currently dominates in OECD

countries. It is not true, that this implies a “free” health care system (it is “free” only at the time of consumption).

The private resources will always play just a supplemental role to the extent which will primarily be based on the social model used (universalistic, performance oriented or liberal). Even when using those resource, it is highly desirable to construct schemes based on community rating or large risk groups, e.g. by age. Individual risk selection in the relation to the care provided is highly problematic phenomenon and, when not regulated, can paradoxically prohibit the supplemental allocation of private money, if desired by public policy, into health and long term care financing.

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